the surface of attachment for the rib, instead of occupying nearly all the breadth of the lateral surface of the centrum, is, on the contrary, of but small extent. The length being 100, the breadth is 159 and the height 112.

The genus *Colymbosaurus*, belonging to the family Elasmosauridæ, known only from the Cretaceous in England, is represented in the upper part of the Kimmeridgian at Boulogne by a species, *Colymbosaurus Dutertrei*, Sauv., the cervical vertebræ of which are remarkable by the form and size of the articular apophyses. The centrum is elongated; and its three diameters are nearly equal; the lower surface, scarcely excavated in the direction of its length, is divided by a narrow keel; the pleurapophyses, intimately soldered to the centrum, spring from it in the form of a flattened plate; the articular surfaces are flat and nearly circular in form; the præzygapophyses are in the form of rounded ribs; the postzygapophyses are in the form of plates; the neural spine is much compressed in the form of a thin plate; the medullary canal is very narrow and rounded.—*Ann. des Sci. Nat.* sér. 6, tome viii.

The Nebaliad Crustacea as Types of a new Order.

By Dr. A. S. Packard, Jun.

The Nebaliadæ, represented by the existing genus *Nebalia*, have generally been considered to form a family of Phyllopod Crustacea. Metschnikoff, who studied the embryology of *Nebalia*, considered it to be a "Phyllopodiform Decapod." Besides the resemblance to the Decapods, there is also a combination of Copepod and Phyllopod characteristics. The type is an instance of a synthetic one, and is of high antiquity, having been ushered in during the earliest Silurian period, when there were (if we regard the relative size of most Crustacea, and especially of living *Nebaliæ*) gigantic forms. Such was *Dithyrocaris*, which must have been over a foot long, the carapace being seven inches long. The modern *Nebalia* is small, about half an inch in length, with the body compressed, the carapace bivalved as in *Limnadia*, one of the genuine Phyllopods. There is a large rostrum overhanging the head; stalked eyes; and besides two pairs of antennæ and mouth-parts, eight pairs of leaf-like, short, respiratory feet, which are succeeded by swimming-feet. There is no metamorphosis, development being direct.

Of the fossil forms, *Hymenocaris* was regarded by Salter as "the more generalized type." The genera *Peltocaris* and *Discinocaris* characterize the Lower Silurian period, *Ceratiocaris* the Upper, *Dictyocaris* the Upper Silurian and the lowest Devonian strata, *Dithyrocaris* and *Argas* the Carboniferous period. Our existing north-eastern species is *Nebalia bipes* (Fabricius), which occurs from Maine to Greenland.

The Nebaliads were the forerunners of the Decapoda, and form, we believe, the type of a distinct order of Crustacea, for which the name Phyllocarida is proposed.—*American Naturalist*, Feb. 1879.